RECEIVED
CENTRAL FAX CENTER
DEC 06 2006

LAW OFFICES OF
FAY KAPLUN & MARCIN, LLP
INTELLECTUAL PROPERTY LAW

150 BROADWAY, SUITE 702
NEW YORK, NEW YORK 10038
PHONE: (212) 619-6000
FAX: (212) 208-6819
WWW.FKMIPLAW.COM

FACSIMILE COVER SHEET

FAX NO	:	(571) 273-8300
TO	:	Commissioner for Patents Mail Stop: Appeal Brief - Patent
FROM	:	Oleg F. Kaplun, Esq. of Fay Kaplun & Marcin, LLP
DATE	:	December 6, 2006
SUBJECT	:	U.S. Appln Serial No. 09/981,546 for *Lossless Variable-Bit Signature Compression* Our Ref.: 40116/06101

NUMBER OF PAGES INCLUDING COVER : 21

MESSAGE:

Please see attached.

Thank you.

RETURNED

Attorney Docket No.: 40116/06101 (A-69368)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s)	:	Williams
Serial No.	:	09/981,546
Filing Date	:	October 17, 2001
For	:	Lossless Variable-Bit Signature Compression
Group Art Unit:	:	2624
Examiner	:	Anh Hong Do

Mail Stop: Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Certificate of Facsimile
I hereby certify that this correspondence is being deposited via facsimile addressed to:

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
Alexandria, VA 22313-1450
571-273-8300

By: Oleg F. Kaplun, (Reg. No. 45,559) Date: December 6, 2006

TRANSMITTAL

In response to the Notification of Non-Compliant Appeal Brief mailed on November 29, 2006, transmitted herewith please find a revised Appeal Brief for filing in the above-identified application. No fees are believed to be required. However, the Commissioner is hereby authorized to charge the **Deposit Account of Fay Kaplun & Marcin, LLP NO. 50-1492** for any additional required fees. A copy of this paper is enclosed for that purpose.

Respectfully submitted,

Dated: December 6, 2006

By: ______________________
Oleg F. Kaplun , Reg. 45,559

Fay Kaplun & Marcin, LLP
150 Broadway, Suite 702
New York, NY 10038
Tel: (212) 619-6000
Fax: (212) 619-0276

Attorney Docket No.: 40116/06101 (A-69368)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
CENTRAL FAX CENTER
DEC 06 2006

Inventor(s)	:	Williams
Serial No.	:	09/981,546
Filing Date	:	October 17, 2001
For	:	Lossless Variable-Bit Signature Compression
Group Art Unit:	:	2624
Examiner	:	Anh Hong Do

Mail Stop: Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Certificate of Facsimile
I hereby certify that this correspondence is being deposited via facsimile addressed to:

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
Alexandria, VA 22313-1450
571-273-8300

By: Oleg F. Kaplun, (Reg. No. 45,559) Date: December 6, 2006

TRANSMITTAL

In response to the Notification of Non-Compliant Appeal Brief mailed on November 29, 2006, transmitted herewith please find a revised Appeal Brief for filing in the above-identified application. No fees are believed to be required. However, the Commissioner is hereby authorized to charge the **Deposit Account of Fay Kaplun & Marcin, LLP NO. 50-1492** for any additional required fees. A copy of this paper is enclosed for that purpose.

Dated: December 6, 2006

Respectfully submitted,

By: Oleg F. Kaplun , Reg. 45,559

Fay Kaplun & Marcin, LLP
150 Broadway, Suite 702
New York, NY 10038
Tel: (212) 619-6000
Fax: (212) 619-0276

CENTRAL FAX CENTER

DEC 0 6 2006

.PATENT
Attorney Docket No.: 40116 - 06101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	
	)	
Williams, Baron D.	)	
	)	
Serial No.: 09/981,546	)	Group Art Unit: 2624
	)	
Filed: October 17, 2001	)	Examiner: Anh Hong Do
	)	
For: LOSSLESS VARIABLE-BIT SIGNATURE COMPRESSION	)	**Board of Patent Appeals and Interferences**

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Arlington, VA 22313-1450

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

In support of the Notice of Appeal filed September 6, 2006 and pursuant to 37 C.F.R. § 41.37, Appellant presents their appeal brief in the above-captioned application.

This is an appeal to the Board of Patent Appeals and Interferences from the Examiner's final rejection of claims 1-15, 18 and 21 in the Final Office Action dated June 15 2006. The appealed claims are set forth in the attached Claims Appendix.

1. Real Party in Interest

This application is assigned to Symbol Technologies, Inc., the real party in interest.

2. Related Appeals and Interferences

There are no other appeals or interferences which would directly affect, be directly affected, or have a bearing on the instant appeal.

3. Status of the Claims

Claims 16, 17, 19, 20 and 22 have been allowed and claims 6 and 11 are objected to as dependent on a rejected base claim.

Claims 1-15, 18 and 21 have been rejected in the Final Office Action and are the subject of the present appeal.

4. Status of Amendments

All amendments submitted by the Appellant have been entered.

5. Summary of Claimed Subject Matter

The present invention comprises a method for compressing data points. (See Specification, page 4, lines 1-8). Independent claim 1 recites a method for compressing a representation of a sequence of points in a space, the method comprising dividing the sequence of points into segments of successive points. As described in the specification of the present application, an electronically captured signature is divided into segments, each having a predetermined number of data points (i.e., segment size). (Id. at p. 5, lines 12-26; Figure 2A, step 230). Claim 1 also recites determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment. The specification states that a minimum and a

maximum segment size are selected, and for each value between these sizes, a compressor determines the number of bits required to represent the entire signature. (Id. at p. 5, line 27- p. 6, line 5; Figure 2A, steps 250-270). Large movements in a segment may require many bits to represent a coordinate, whereas small movements may only require a few bits. Thus, each segment may have its own bit resolution. (Id. at page 6, lines 12-18). After each value is tested, the segment size that minimizes the number of bits needed to stored the signature is selected and the signature is compressed accordingly. (Id. at page 6, lines 19-23; Figure 2B, steps 2B0 and 2C0). Claim 1 further recites compressing each of the segments into the compression size for each segment and combining the compressed segments into a data stream. As stated in the specification, the compressed segments are combined to create a single compressed data stream. (Id. at page 8, lines 10-13).

Independent claim 18 recites a computer readable medium wherein is located a computer program for compressing a representation of a sequence of points in a space by: dividing the sequence of points into segments of successive points (Id. at p. 5, lines 12-26); determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment (Id. at p. 5, line 27- p. 6, line 5); compressing each of the segments into the compression size for each segment (Id. at page 6, lines 19-23); and combining the compressed segments into a data stream. (Id. at page 8, lines 10-13). The specification states the invention can be a data store holding a computer program for executing the methods described above. (Id. at page 5, lines 1-4).

Independent claim 21 recites a compressor for compressing a representation of a sequence of points in a space, comprising a computer readable medium wherein is located a computer program for compressing the representation of the sequence of points in the space. (Id. at p. 5, lines 12-26). The compressing includes the steps of dividing the sequence of points into segments of successive points (Id.); determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative

distances between the points of each segment (Id. at p. 5, line 27- p. 6, line 5); compressing each of the segments into the compression size for each segment (Id. at page 6, lines 19-23); and combining the compressed segments into a data stream (Id. at page 8, lines 10-13). The compressor also comprises a CPU for executing the computer program in the data store (Id. at p. 5, lines 15-17); and a link, communicatively coupling the data store and the CPU. (Id.).

6. Grounds of Rejection to be Reviewed on Appeal

I. Whether claims 1-14, 18 and 21 are unpatentable under 35 U.S.C. § 112 as failing to comply with the written description requirement.

II Whether claims 1-5, 7-10, 12-15, 18 and 21 are unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,091,975 to Berger et al. ("Berger") in view of U.S. Patent No. 5,748,904 to Huang et al. ("Huang").

CENTRAL FAX CENTER

DEC 06 2006

Serial No.: 09/981,546
Group Art Unit: 2624
Attorney Docket No.: 40116 - 06101

7. Argument

I. The Rejection of Claims 1-14, 18 and 21 Under 35 U.S.C. § 112, First Paragraph, as Failing to Comply with the Written Description Requirement Should Be Reversed.

A. The Examiner's Rejection

In the Final Office Action, the Examiner rejected claims 1-14, 18 and 21 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. (See 6/15/06 Office Action, ¶¶ 2-3). The Examiner maintained this position in the Advisory Action, stating that the claims are unsupported by the specification. (See 8/17/06 Advisory Action).

B. The Referenced Claims Are Fully Supported By the Specification.

The Examiner maintains that the recitation "determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment," which is recited in independent claims 1, 18 and 21, is not described in the specification of the present application. (See 6/15/06 Office Action, ¶ 2). Specifically, the Examiner states that the specification only discloses using a number of bits to represent each coordinate of each data point in a segment, rather than "a number of bits needed to represent relative distances between the points of each segment."

The specification states that a signature can be represented as a collection of packets representing absolute or relative movements of a pen. (See Specification, p. 2, lines 11-16). Specifically, a compressor converts electronically captured pen data (e.g., DrawTo data) to

relative movement data and determines the magnitude of the largest relative movement in a given segment prior to compressing the data. (Id. at p. 6, lines 24-28). In one example, a set of four 16-bit signature points (25, 800), (130, 1003), (182, 1620) and (182, 1678) are compressed by first converting the points (which are absolute-position coordinates) into relative-movement coordinates (0, 0), (105, 203), (52, 617) and (0, 58). (Id. at p. 7, lines 10-16). Each relative-movement coordinate represents a movement required to reach a subsequent point. For example, to move from the coordinate (25, 800) to the coordinate (130, 1003) requires a movement of 105 in the x-direction and 203 in the y-direction. Thus, each absolute-position coordinate is converted into a relative-movement coordinate by taking the difference between the coordinate and a previous coordinate, with the exception of the first absolute-position coordinate, which is a reference coordinate represented as the relative-movement coordinate (0, 0).

The procedure described above differs from that described in paragraphs [0030]-[0033] of the specification, which were cited in support of the Examiner's contention. The cited paragraphs describe a process where the data is compressed by determining the minimum number of bits needed to represent the magnitude of the largest relative movement M. (Id. at p. 6, lines 9-11 and 28-31). However, in order for the compression to be performed, the absolute-position coordinates must first be converted into relative-movement coordinates. Without doing so, it would not be possible to determine M. Thus, the procedure cited by the Examiner and the procedure to convert the absolute-position coordinates into relative-movement coordinates are separate, but crucial components of a compression method according to the present invention.

As shown in Figure 2A, the procedure cited by the Examiner to compress the relative-movement coordinates corresponds to steps 250-270, while the actual conversion of the absolute-position coordinates to relative-movement coordinates corresponds to step 220. Thus, Appellant respectfully requests that the Board overturn the Examiner's rejection of claims 1, 18 and 21 under 35 U.S.C. § 112, first paragraph, along with all claims depending directly or indirectly therefrom (2-14).

II. The Rejection of Claims 1-5, 7-10, 12-15, 18 and 21 Under 35 U.S.C. § 103(a) as Obvious Over U.S. Patent No. 5,091,975 to Berger et al. In View of U.S. Patent No. 5,748,904 to Huang et al. Should Be Reversed.

A. The Examiner's Rejection

In the Final Office Action, the Examiner rejected claims 1-5, 7-10, 12-15, 18 and 21 under 35 U.S.C. § 103(a) as unpatentable over Berger in view of Huang . (See 6/15/06 Office Action, ¶ 5). In the final rejection, the Examiner noted that Berger fails to disclose or suggest "determining a compression size for each of the segments, wherein the compression size varies based on *a number of bits needed to represent each segment.*" (Id. at p. 4, Emphasis added). The Examiner cited Huang to cure this deficiency.

B. The Cited References Fail to Disclose Determining a Compression Size for Each of the Segments, Wherein the Compression Size Varies Based on a Number of Bits Needed to Represent Relative Distances Between the Points of Each Segment as Recited in Claim 1.

Berger describes a method of compressing a signature signal, which is divided into a plurality of segments. (See Berger, Abstract). A computer divides the signature signal into the plurality of segments, such that each segment is encoded using a modified ring-encoding technique and represented using eight bits. (Id. at col. 3, lines 21-26). The ring-encoding technique utilizes a graph in which the starting point of the first segment is the origin and a plurality of squares centered at the origin comprise rings. (Id. at col. 3, lines 27-51). The number of grid points along a perimeter of each ring is equal to eight times the spacing of the ring from the origin, and the sum of all the grid points is 256, which can be encoded in a single 8-byte number. (Id. at col. 3, lines 52-62). The points at which the signature intersects each ring are calculated, along with the grid points closest to the intersection points. Then, beginning with the outermost ring, a cone-shaped region is defined using points on the outermost ring that are one-half spacing away from the previously calculated grid points. (Id. at col. 3, line 63 - col. 4, line 39). If there are intersection points that lie outside the cone, the method proceeds to the next smaller-sized ring and a new cone is defined. This continues until a cone is defined such that all the intersecting points are located within the cone, at which point the segment represented by a line from the origin to an intersection point of the current cone is encoded. (Id.). The origin is then shifted to the grid point closest to the intersection point of the current cone, and the method repeats. (Id.).

Huang describes a method for compressing graphic data by dividing the data into segments. (See Huang, Abstract). The graphic data is divided into segments, with the size of the segments being programmable. (Id. at col. 2, lines 56-62). A compressor utilizes three encoders that feature different compression algorithms: a run length encoder, a run index encoder and a bit-map encoder. (Id. at col. 3, lines 33-46). Graphic data in one segment is compressed pixel-by pixel and each encoder generates a code-word. The code-word that can compress the largest number of pixels is then chosen as the compressed data. (Id. at col. 3, lines 47-55). Each compressed segment has a code-word header that indicates the compression method used and the total number of code-words for that segment. (Id. at col. 3, lines 60-67). The size of the compressed data is defined as the total number of bytes of the code-header and the code-words for each segment. (Id. at col. 4, lines 1-5).

The Examiner recognizes that Berger fails to show or suggest "wherein the compression size varies based on a number of bits needed to represent each segment," and cites Huang to cure this deficiency. (See 6/15/06 Office Action, p. 4, ¶ 5). However, the Examiner's argument is based on an erroneous conclusion that the recitation of "wherein the compression size varies based on a number of bits needed to represent *relative distances between the points of* each segment," in claim 1 is unsupported by the specification. Therefore, in formulating the rejection, the Examiner omitted this recitation from the readings of claims 1, 18 and 21. As discussed above, the specification provides ample support for this limitation. Appellant therefore respectfully submits that these claims be considered in their full and complete form, as

presented in the attached claims appendix.

Appellant further submits that Huang fails to show or suggest "wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment," as recited in claim 1. The compression method of Huang uses a plurality of encoding algorithms to compress the segment data. The resulting compressed data is therefore a function of the unique combination of encoding algorithms used to encode each segment. The size of the compressed data is altered by changing the encoding algorithm used for any given segment. Nowhere does Huang teach or suggest varying compression size based on the representation of relative distances.

Furthermore, Huang is unconcerned with the specifics of how a particular encoder (e.g,. run length, run index or bit-map) implements a compression algorithm. Huang is only concerned with the output of the encoder relative to the output of other encoders, and selects the output based only on whether the output compresses more bits than the other outputs. By failing to describe or even suggest a specific implementation of a compression algorithm, Huang clearly relies on the use of conventional compression techniques. Thus, it is respectfully submitted that neither Berger nor Huang, either alone or in combination, discloses or suggests "determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment," as recited in claim 1.

Therefore, at least for these reasons, it is respectfully submitted that claim 1 is

allowable. Accordingly, Appellant respectfully requests that the Board overturn the Examiner's rejection under 35 U.S.C. 103(a) of independent claim 1 and all the claims depending directly or indirectly therefrom (claims 2-5, 7-10 and 12-15).

Independent claims 18 and 21 were also rejected under 35 U.S.C. § 103(a) as unpatentable over Berger in view of Huang. Claims 18 and 21 also recite "determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment." Thus, it is respectfully submitted that claims 18 and 21 are allowable for at least the same reasons as claim 1. Accordingly, Appellant respectfully requests that the Board overturn the Examiner's rejection under 35 U.S.C. § 103(a) of independent claims 18 and 21.

Serial No.: 09/981,546
Group Art Unit: 2624
Attorney Docket No.: 40116 - 06101

8. Conclusions

For the reasons set forth above, Appellant respectfully requests that the Board reverse the final rejections of the claims by the Examiner under 35 U.S.C. § 112 and 35 U.S.C. § 103(a), and indicate that claims 1-15, 18 and 21 are allowable.

Respectfully submitted,

Date: December 6, 2006

By: [signature]
Oleg F. Kaplun (Reg. No. 45,559)

Fay Kaplun & Marcin, LLP
150 Broadway, Suite 702
New York, NY 10038
Tel: (212) 619-6000
Fax: (212) 619-0276

DEC 0 6 2006

CLAIMS APPENDIX

1. (Rejected) A method for compressing a representation of a sequence of points in a space, the method comprising:

dividing the sequence of points into segments of successive points;

determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment;

compressing each of the segments into the compression size for each segment; and

combining the compressed segments into a data stream.

2. (Rejected) The method of claim 1, wherein the step of dividing comprises

dividing a sequence of points into segments of S successive, i-bit points.

3. (Rejected) The method of claim 2, wherein before the step of dividing, the following step is performed:

determining the value of S.

4. (Rejected) The method of claim 3, wherein the step of determining the value of S comprises

generating multiple compressions of the sequence, each of the multiple compressions at a different value of S.

5. (Rejected) The method of claim 3, wherein the step of determining the value of S comprises

generating a compression of the sequence for each value of S from a minimum to a maximum.

6. (Objected) The method of claim 3, wherein the step of determining the value of S comprises

generating a compression of the sequence for each value of S from a minimum of two (2) to a maximum equal to the number of points in the sequence.

7. (Rejected) The method of claim 3, wherein the step of determining the value of S comprises

generating multiple compressions of the sequence, each of the multiple compressions at a different value of S; and

determining the value of S to be the value of S generating the smallest of the multiple compressions.

8. (Rejected) The method of claim 2, wherein the step of compressing comprises

compressing each of the segments of S successive, i-bit points into segments of j-bit points, where j<=i.

9. (Rejected) The method of claim 8, wherein the value of j may vary from segment to segment.

10. (Rejected) The method of claim 8, wherein, for any given segment, j is the minimum number of bits necessary to represent the data in that given segment.

11. (Objected) The method of claim 1, wherein the step of compressing comprises

determining the largest coordinate in any dimension of any point in a segment;

setting j for the segment to the ceiling of the base-2 log of that largest coordinate; and

truncating from points of the segment most significant bits exceeding j bits.

12. (Rejected) The method of claim 1, wherein the sequence of points is an electronic signature.

13. (Rejected) The method of claim 1, wherein the step of compressing comprises

compressing each of the segments without losing any of the data in any of the segments.

14. (Rejected) The method of claim 1, wherein the step of compressing comprises

compressing each of the segments, losing data as directed by an invoking user.

15. (Rejected) The method of claim 1, wherein before the step of dividing the following step is performed:

converting DrawTo data to relative-movement data.

18. (Rejected) A computer readable medium wherein is located a computer program for compressing a representation of a sequence of points in a space by:

dividing the sequence of points into segments of successive points;

determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment;

compressing each of the segments into the compression size for each segment; and

combining the compressed segments into a data stream.

21. (Rejected) A compressor for compressing a representation of a sequence of points in a space, comprising:

a computer readable medium wherein is located a computer program for compressing the representation of the sequence of points in the space by:

dividing the sequence of points into segments of successive points;

determining a compression size for each of the segments, wherein the compression size varies based on a number of bits needed to represent relative distances between the points of each segment;

compressing each of the segments into the compression size for each segment; and

combining the compressed segments into a data stream.

a CPU for executing the computer program in the data store; and

a link, communicatively coupling the data store and the CPU.

DEC 06 2006

Serial No.: 09/981,546
Group Art Unit: 2624
Attorney Docket No.: 40116 - 06101

EVIDENCE APPENDIX

No evidence has been submitted herewith or is relied upon in the present appeal.

RECEIVED
CENTRAL FAX CENTER
DEC 06 2006

Serial No.: 09/981,546
Group Art Unit: 2624
Attorney Docket No.: 40116 - 06101

RELATED PROCEEDINGS APPENDIX

There are no related proceedings and/or decisions which relate to the present appeal.